



U.S. DEPARTMENT OF  
**ENERGY**



# 2010 Congressional Nuclear Cleanup Caucus

*Portsmouth/Paducah Project Office  
Portsmouth, OH and Paducah, KY Sites*

*March 16, 2010*

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**Manager**

**Portsmouth/Paducah Project Office**



**EM**

*Environmental Management*

safety ♦ performance ♦ cleanup ♦ closure

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# EM is Embarked on a Journey to Excellence

## ***Our Vision:***

***“EM completes quality work safely, on schedule and within cost and delivers demonstrated value to the American taxpayer.”***



**EM**

***Environmental Management***

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# EM Mission and Priorities

***“Complete the safe cleanup of the environmental legacy brought about from five decades of nuclear weapons development, production, and Government-sponsored nuclear energy research.”***



- Activities to maintain a safe, secure, and compliant posture in the EM complex
- Radioactive tank waste stabilization, treatment, and disposal
- Spent nuclear fuel storage, receipt, and disposition
- Special nuclear material consolidation, processing, and disposition
- High-priority groundwater remediation
- Transuranic and mixed/low-level waste disposition
- Soil and groundwater remediation
- Excess facilities deactivation and decommissioning (D&D)



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# EM Program Goals

- **Risk Reduction**
  - Ensure the safety and health of the public and the workers
  - Protect the environment
  - Reduce the EM Footprint by 90% by 2015
- **Maintain Compliance**
  - 37 compliance agreements with state and Federal regulatory agencies
  - Complete building the capability for dispositioning tank waste, nuclear materials, and spent nuclear fuel
- **EM American Recovery and Reinvestment Act Goals**
  - Thousands of jobs created or saved
  - Reduce the EM Footprint by 40% by 2011
- **Improve Project Performance**
  - Improve construction project performance
  - Deliver all projects on time and within cost
  - Get EM projects removed from the GAO High-Risk List
- **Establish strategic options for Special Nuclear Materials, Spent Nuclear Fuel, Radioactive Tank Waste, Groundwater and Excess Facilities not currently in the EM portfolio**
  - Overall objective is to reduce life-cycle costs and shorten the period of program execution





# EM Strategic Goals

- Improve **Safety Performance** with the goal of zero accidents/incidents
- Improve **Project Management**
  - Restructuring the project portfolio
  - Adapt the Office of Science construction project model to EM
    - Construction Project Review, front end planning; appropriate pricing and contingency
  - Establish Performance Metrics for EM operating projects
  - Align project and contract management
  - Streamline the acquisition process
- Achieve **Excellence in Management and Leadership** with the objective of making EM an employer of choice in the Federal government
- Align **Headquarters and Field Operations** in order to streamline decision-making and improve efficiency
- Utilize **Science and Technology** to optimize the efficiency of tank waste, excess nuclear materials, spent nuclear fuel and groundwater treatment and disposition
  - Evaluate programmatic alternatives to smartly reduce the cost of the program and period of execution



# PPPO has Embarked on a Journey to Excellence

## *Portsmouth/Paducah Project Office Vision:*

*“Safely accelerate cleanup, ensuring protection of the public and environment, provide jobs for southern Ohio and western Kentucky, and work with the local communities to provide opportunities for economic growth.”*

### **Demographics:**

- **2,000+ employees**
- **3,556 acres**

Paducah Site



Portsmouth Site

### **Demographics:**

- **2,300 employees**
- **3,800 acres**



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# PPPO Mission and Priorities

## Priorities are:

- Accelerated decontamination and decommissioning (D&D) of excess facilities
- Depleted Uranium Hexafluoride ( $\text{DUF}_6$ ) conversion
- Environmental Remediation

**Portsmouth ended production in 2001**



**Paducah Gaseous Diffusion Plant is the only operating (USEC) uranium Enrichment facility in U.S. today**



**$\text{DUF}_6$  conversion**



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# Funding for Portsmouth Cleanup

	<b>FY2009 Enacted Appropriations In Millions</b>	<b>FY2010 Appropriations In Millions</b>	<b>FY2011 Congressional Request In Millions</b>
<b>Portsmouth Gaseous Diffusion Plant</b>	<b>\$240.7</b>	<b>\$303.3</b>	<b>\$479.0</b>
<b>American Recovery &amp; Reinvestment Act</b>		<b>FY2009/11 - Total: \$118.2</b>	
<b>Uranium transfer for accelerated cold shutdown work</b>		<b>875 metric tons uranium</b>	

**Substantial increase in funding proposed for FY2011 reflects the request for appropriation in lieu of the Uranium transfer as planned in Fall 2010**





# Portsmouth/Paducah Job Creations – American Recovery and Reinvestment Act (ARRA)

*Job fair held in Chillicothe, Ohio*



- Advertisements and seven job fairs generated more than 8,000 resumes
- New-hires trained for five ARRA projects at Portsmouth and three ARRA projects at Paducah

## Total DOE EM Site Employment\*

Site	December 2009	December 2010
PORTS	1,738	1,984
PAD	760	979

\* Includes DUF<sub>6</sub> and base programs. Does not include temporary Construction and Building Trades personnel or non-DOE programs.



*Job seekers line around West Kentucky Community & Technical College gym*



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# Major Progress on Portsmouth ARRA Projects

- Five accelerated projects
  - X-533 - Switchyard
  - X-633 - Cooling tower
  - X-760 - Chemical Bldg
  - X-701B - Soils
  - UMC – disposition
- \$118.2 million in ARRA funding
- More than 220 FTEs hired at Portsmouth
- All projects are ahead of September 2011 schedule



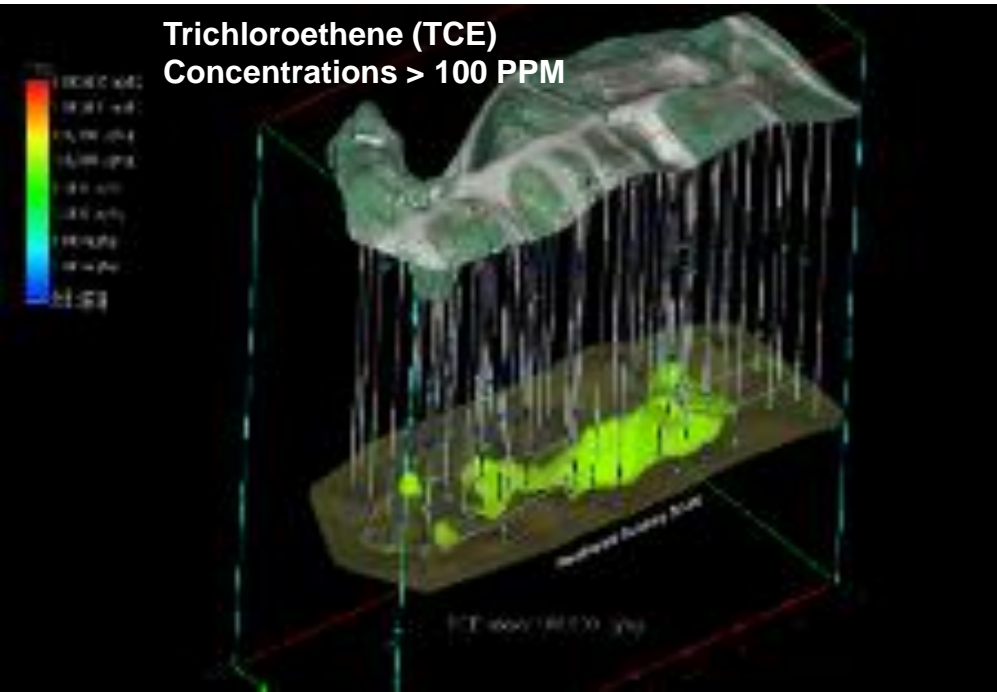
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# Major Progress on Portsmouth ARRA Projects



## X-701B Groundwater TCE Source Removal

- Project mixes sodium persulfate oxidant directly into 42,000 ft<sup>2</sup> source area of TCE contaminated soils to depths of 30 ft
- Two-shift operations commenced late December 2009
- Initial test cells completed February 2010



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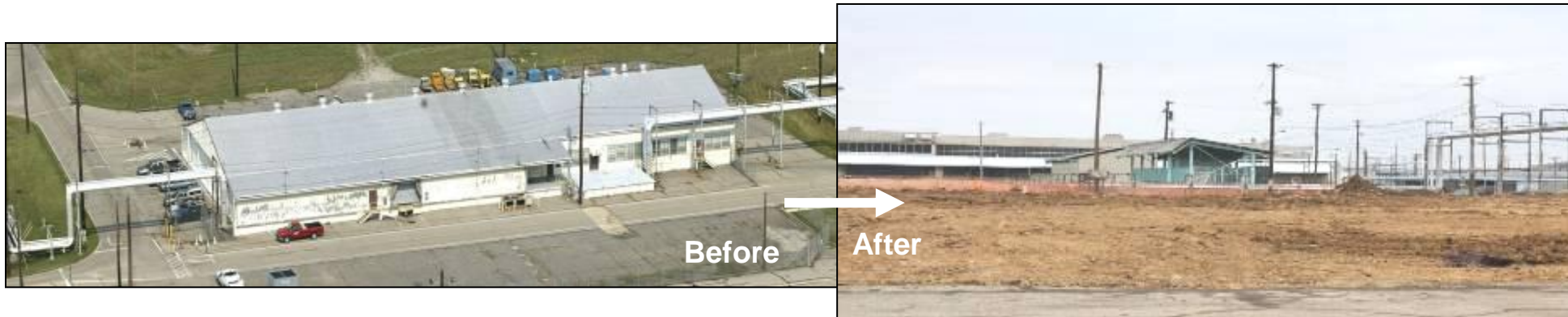
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# EM Base Program at Portsmouth FY 09-10

- 20,000 ft<sup>2</sup> Shipping and Receiving Building demolished late 2009 – 17<sup>th</sup> inactive facility removed in three years



- Total of 3,800 cubic meters of low-level and mixed low-level waste shipped in FY2009 – 20% more than projected
- Project is nearly 70% complete and on schedule for April 2010 completion to ship 266.5 tons of material, including 325 large classified items, for disposal at Nevada Test Site



Equipment removal from DMSAs 11 & 12



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# EM Base Program at Portsmouth FY 09-10

## Cold Shutdown of GDP Facilities

- Completed Technetium-99 contaminant removal project recovering 15,242 tons of uranium including 173 tons of additional uranium beyond original scope
- Completed removal of 5.7M lbs of lubricating and transformer oils from the GDP in 2009; cost savings of more than \$20M by utilizing private disposal alternative
- Reached agreement with USEC to transfer all three large primary process buildings on Oct 1, 2010
- Acceleration of deactivation activities; removal of uranium hold-up deposits completed in two of three process buildings



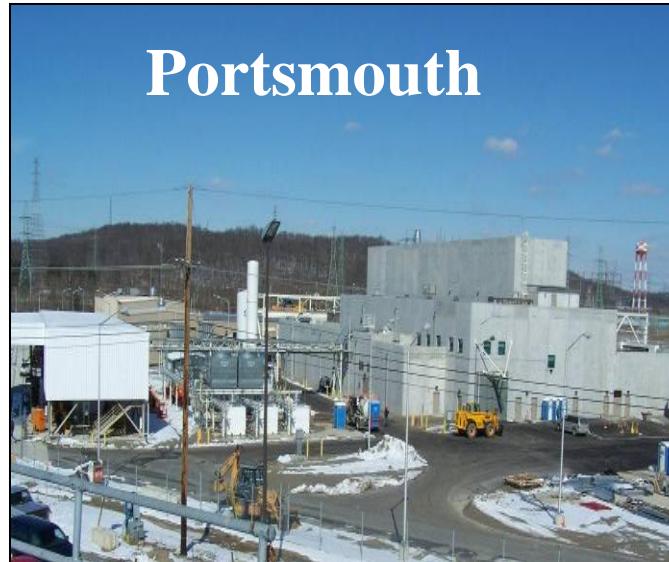
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# Depleted Uranium Hexafluoride (DUF<sub>6</sub>) Plant



- Preparing for DOE Operational Readiness Review
- Hot functional testing to start May 2010, five months ahead of baseline schedule
- Plant will employ approximately 160 personnel during operation



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# Funding for Paducah Cleanup

	FY2009 Enacted Appropriations In Millions	FY2010 Appropriations In Millions	FY2011 Congressional Request In Millions
Paducah Gaseous Diffusion Plant	\$169.9	\$172.1	\$145.0
American Recovery & Reinvestment Act	FY2009/11 Total: \$78.8		



# Major Progress on Paducah ARRA Projects

- Three accelerated D&D projects
  - C-340 Metals Plant
  - C-410 Feed Plant
  - C-746A East End Smelter
- \$78.8 million in ARRA funding
- More than 158 FTEs hired at Paducah
- All projects are ahead of September 2011 schedule

**C-340 Metals Plant**



**Equipment Removal**

**East End Smelter**



**C-410 Feed Plant**



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# Major Progress on Paducah ARRA Projects



## C-746A East End Smelter

- Disposing of equipment
- Removing loose material
- Facility scheduled for demolition to slab



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# EM Base Program at Paducah

## Groundwater Contamination Source Removal

- Goal is to recover ~50K gallons of the degreaser TCE in the subsurface
- System uses buried electrodes to heat subsurface and vaporize TCE for extraction
- Full scale operations expected in April 2010
- Phase II construction begins July 2010



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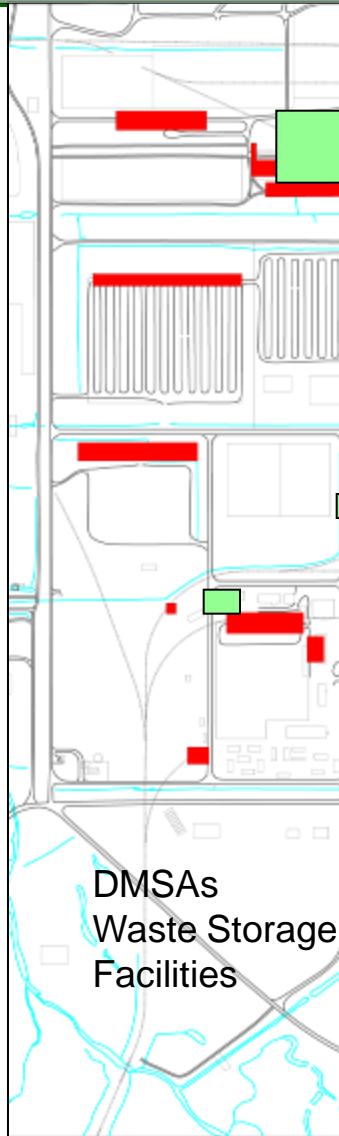
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# EM Base Program at Paducah

## Excess Material Disposition

- All stored wastes removed
  - More than 1.1 million ft<sup>3</sup> since 2002
  - Some stored onsite for decades
- Final shipment of legacy waste (LLW/MLLW) this month
- 160 DOE Material Storage Areas (DMSAs) characterized ahead of 2009 Agreed Order milestone
- All DMSA material dispositioned in FY2010



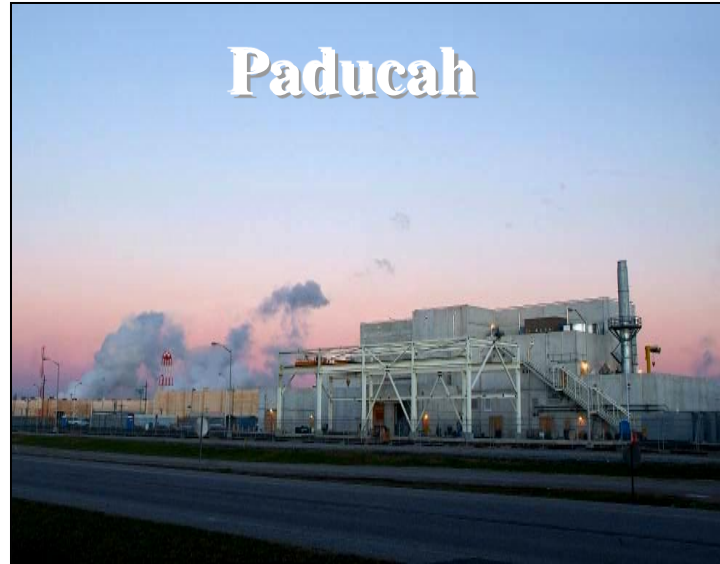
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# Depleted Uranium Hexafluoride (DUF<sub>6</sub>) Plant



- Construction & system testing complete, commissioning and employee training is underway
- Hot functional testing and operations to start late in FY2010, several months ahead of schedule
- The Paducah DUF6 Conversion Facility will employ over 160 skilled hourly and salaried personnel during operations for the next 25 years.



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# Near-Term Challenges at Portsmouth and Paducah

- Hot functional testing and start-up of DUF<sub>6</sub> facilities
- Successful acceleration of ARRA projects will require early transition of ARRA-funded workers with careful planning
- Continuing to work transition of facilities with USEC at Portsmouth
- Maintaining safe work performance during multiple contract transitions at both Portsmouth and Paducah
- Ramp up of D&D work at Portsmouth, once D&D contract is awarded
- Future potential large excavations at Paducah may require additional regulator interaction on CERCLA requirements

